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APPLICANT : HITACHI LTD;

INVENTOR : MIYAZAKI HIROSHI;

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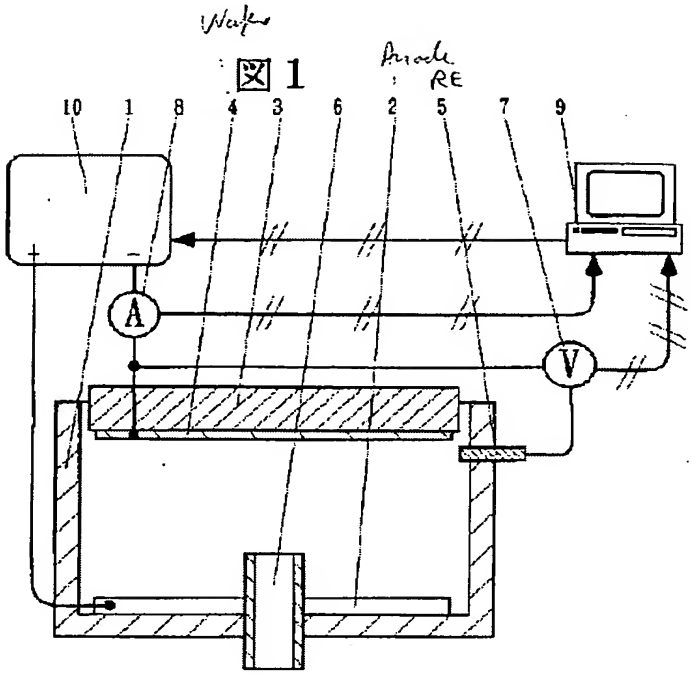
TITLE : METHOD FOR MANUFACTURING SEMICONDUCTOR DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To prevent film deposition defect due to plating by controlling the surface potential of a seed film.

SOLUTION: In a manufacturing method of a semiconductor device, in which a wafer is plated, the plating is performed by providing a reference electrode in the vicinity of the wafer and controlling applied voltage based on the surface potential of the wafer, which is obtained by the reference electrode. To be more specific, the surface potential is controlled to be negative to equilibrium potential in a 1st step, which is the initial time of the plating, and is controlled to be near the equilibrium potential in a 2nd step of the plating. As a result, the surface potential of the seed film is controlled highly precisely, the dissolution of the seed film is prevented and the strength of a high polymer coating film is made uniform and thus the film deposition defect of the plated film is prevented.